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BUMED INSTRUCTION 6224.8

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical Department Personnel

Subj: TUBERCULOSIS CONTROL PROGRAM

Ref: (a) Centers for Disease Control (CDC). Screening for Tuberculosis and Tuberculous Infection in High-Risk Populations, and The Use of Preventive Therapy for Tuberculous Infection in the United States: Recommendations of the Advisory Committee for the Elimination of Tuberculosis. MMWR 1990;39 (No. RR-8)
(b) NAVMEDCOMINST 6220.2A (NOTAL)
(c) CDC. Tuberculosis Among Foreign-Borne Persons Entering the United States: Recommendations of the Advisory Committee for the Elimination of Tuberculosis. MMWR 1990;39 (No. RR-18)
(d) NAVMEDCOMINST 6320.3B
(e) CDC. Tuberculosis and Human Immunodeficiency Virus Infection: Recommendations of the Advisory Committee for the Elimination of Tuberculosis. MMWR 1989; 38:236-250

Encl: (1) Tuberculosis Screening Program
(2) Evaluation and Preventive Therapy (Chemoprophylaxis) of Tuberculin Reactors
(3) Tuberculosis Contact Investigation Program and Tuberculosis Patient Management
(4) Periodic Patient Evaluations
(5) Record Keeping and Administration

1. Purpose. To provide guidelines for a tuberculosis control program of screening, preventive therapy, case identification and treatment, and contact investigation to control tuberculosis among members of the Navy, the Marine Corps, and in other medical beneficiaries.

2. Cancellation. NAVMEDCOMINST 6224.1.

3. Background

a. Tuberculosis continues to be a public health problem in the United States and in the U.S. naval forces. Over 20,000 cases of tuberculosis occur annually in the United States, and cases occur regularly among Navy and Marine Corps members, their

dependents, retired personnel, and Civil Service Mariners (CIVMARs). The Navy continues to experience local epidemics of the transmission of tuberculous infection onboard ships or in other closed environments. Tuberculosis constitutes an important opportunistic infection among individuals infected with the human immunodeficiency virus (HIV).

b. Morbidity and mortality from tuberculosis can be reduced by the early identification and treatment of persons with tuberculosis disease. In addition, early detection and treatment of persons with tuberculosis disease reduces the potential that infection will be transmitted to others.

c. The tuberculin skin test with purified protein derivative (PPD) administered by the Mantoux method is the most sensitive and specific test available for identifying those who are infected with Mycobacterium tuberculosis, the bacterium that causes tuberculosis. Periodic tuberculin skin testing detects newly infected persons, so that they can receive preventive therapy. An infected person has about a 5 percent lifetime risk of developing tuberculosis disease, if there is no intervention. Preventive therapy with isoniazid (INH) is the most effective measure to prevent the development of tuberculosis disease in a newly infected person. Although preventive treatment reduces the risk of disease, it does not totally eliminate it. Infected persons must be evaluated periodically and kept informed about the symptoms of tuberculosis disease.

4. Tuberculosis Control Program

a. Definitions

(1) Tuberculosis. A disease produced by infection with M. tuberculosis. For purposes of this instruction, persons infected with M. tuberculosis are considered to be in one of the following categories:

(a) Active Disease. The person has symptoms, signs, radiographic, or laboratory evidence of pulmonary, meningeal, miliary, or extrapulmonary tuberculosis. Pulmonary tuberculosis is the most common form of active disease, but not the only one. It causes the most concern because of the potential to transmit the infection to others by the airborne route. In general, such persons require treatment with multiple antibiotics, and will be or should be under the care of a physician.

(b) Tuberculosis Infection. The person has no symptoms, signs, or radiographic evidence of active disease, but does have evidence of infection, as indicated by the presence of a positive tuberculin skin test. For purposes of this program, all individuals who have a positive tuberculin skin test are considered to have a tuberculosis infection. Although such

individuals may also have active disease, for purposes of this instruction, tuberculosis infection refers solely to individuals whose only evidence of tuberculosis infection is a positive tuberculin skin test. When the phrase tuberculosis infection is intended to include individuals with active disease, this will be specifically indicated.

(2) Tuberculin Skin Test. Refers to the Mantoux method of skin testing for tuberculosis described in enclosure (1).

(3) Mantoux Method. A tuberculin skin test using a syringe and needle to inject purified protein derivative (PPD) of tuberculin. Intermediate strength is 5 tuberculin units (5 TU) of PPD. Low strength contains one-fifth of the intermediate strength dose (1 TU).

(4) Induration. An area around the site of tuberculin injection that is raised and firm to the touch.

(5) Tuberculin Reactor. A person with an area of induration to a 5 TU tuberculin skin test (or to a 1 TU tuberculin skin test) when read 48 to 72 hours after administration. (The degree of induration which defines a reactor depends upon various risk factors. These are set out in table 1 of enclosure (2).)

(6) Tuberculin Nonreactor. A person with an area of induration of less than 5 mm (usually no reaction or zero mm induration) to a 5 TU tuberculin skin test.

(7) BCG Vaccine. Bacillus Calmette-Guerin (BCG) vaccines made from live attenuated mycobacteria strains are commonly used in some countries in an attempt to prevent vaccinees from becoming infected with tuberculosis.

(8) Health Care Worker. Includes military and civilian medical and dental health care workers.

b. Program Summary. The Tuberculosis Control Program consists of periodic tuberculosis screening, prevention of tuberculosis disease among tuberculin reactors, management of tuberculosis disease, and tuberculosis contact investigations.

(1) Tuberculosis Screening. Detects persons who have tuberculosis infection (including those who have progressed to active disease).

(a) Tuberculin Skin Testing. Enclosure (1) outlines the procedures and frequency for initial and periodic screening.

(b) Chest Radiographs. These are used in the initial evaluation of tuberculin reactors and in the evaluation of any patient who may have symptoms or signs suggestive of active disease. Enclosure (1) describes guidelines for chest radiographs in tuberculosis control programs.

(2) Prevention of Active Disease. Tuberculin reactors will be referred for medical evaluation for preventive therapy to decrease their chance of progression to active disease. Reference (a) and enclosure (2) describe specific aspects of this program.

(3) Management of Active Disease. Persons with active disease must be treated to prevent progression of disease in the individual and to reduce the spread of infection to contacts. A case of tuberculosis shall be reported by Disease Alert Report as required by reference (b). Enclosure (3) describes some aspects of management of a patient with active disease.

(4) Tuberculosis Contact Investigations. These are designed for early detection of infection in persons who probably have been significantly exposed to a person with tuberculosis disease, especially pulmonary tuberculosis. Enclosure (3) outlines the procedures.

5. Action. Each commander, commanding officer, or officer in charge is responsible for the maintenance of an effective Tuberculosis Control Program in his or her command.

a. Active Duty and Reserve Personnel. The Tuberculosis Control Program for active duty and Reserve personnel is outlined in enclosures (1) through (5). The command holding the medical treatment record is responsible for monitoring health records
and managing local tuberculosis control programs for affected personnel. Medical treatment records must be reviewed and compliance with the applicable portions of this instruction ascertained at least annually. The activity maintaining medical treatment records is responsible for assuring that tuberculin skin test status is clearly and properly indicated in the sensitivity tests section of the Immunization Record, SF 601, and that periodic patient evaluations of tuberculin reactors are appropriately documented in patient health records on the Chronological Record of Medical Care, SF 600.

b. Dependents and other civilians except for the Military Sealift Command.

(1) Dependents. Commands in high-risk areas, as identified by the cognizant area Navy environmental and preventive medicine unit (NAVENPVNTMEDU), must extend the active duty

program described to dependents residing in the area. Dependent

contacts of cases of active disease must undergo periodic tuberculin skin testing, preventive therapy (if indicated), and followup evaluations. Dependents can be referred to tuberculosis referral centers, other military treatment facilities, or civilian sources as warranted by the situation. The local health benefits counselor must advise sponsors on treatment options for patients who are dependent parents or parents-in-law.

(2) Alien Dependents

(a) Foreign-born persons applying for permanent entry into the United States are required to be screened for tuberculosis. Tuberculosis screening and medical followup of aliens must be handled per reference (c).

(b) Before entry of an alien with active disease into the United States may be authorized, the alien must present assurance that medical care in the United States will be provided by a recognized medical facility. The internal medicine services and patient affairs departments of the following naval hospitals (NAVHOSPs) are designated points of contact to offer necessary care for tuberculosis to alien dependents who are currently residing in overseas areas with their Navy or Marine Corps sponsors:

1. NAVHOSP Bremerton, WA

2. NAVHOSP Oakland, CA

3. NAVHOSP San Diego, CA

4. NAVHOSP Bethesda, MD

5. NAVHOSP Charleston, SC

6. NAVHOSP Portsmouth, VA

Upon assurance of appropriate therapy, these dependents will not be denied entry into this country because of active disease when the sponsor is assigned in the United States. Reference (c) provides additional guidelines applicable to the evaluation and management of alien dependents entering the United States.

(3) Civilian Employees. Special programs, such as hospital infection control programs, may require tuberculosis screening for civilian employees. Those found to be tuberculin reactors must be referred for appropriate medical evaluation. If tuberculosis disease is found, the appropriate civilian health agency must be notified. If there is an indication that the infection has resulted from Navy employment, Federal employees

should be referred to the Office of Federal Employee Compensation

for determination of the availability of treatment under provisions of the Federal Employee Compensation Act and reference (d). Nonappropriated fund employees should be referred to an analogous compensation representative for determination of compensability under provisions of the Longshoremen's and Harbor Workers' Compensation Act and reference (d). Contact studies must be done in cooperation with the appropriate civilian health authority using guidelines in enclosure (3). If not covered under provisions of reference (d), the employee must be advised to seek adequate medical care.

(4) HIV Testing of Civilians. All dependents and civilian employees who are tuberculin skin test reactors, as defined in table 1 of enclosure (2), or who have other evidence of tuberculosis must be queried about HIV risk behaviors per reference (e). Individuals with HIV risk factors should be counseled and offered a serological screening test for HIV antibody.

c. Military Sealift Command Personnel. The Tuberculosis Control Program for the Military Sealift Command and its units (to include CIVMARs) is to be equivalent to the program for active duty personnel as outlined in enclosures (l) through (5). HIV testing of such personnel is to be carried out in the same way as for dependents and civilian employees, discussed in paragraph 5b(4).

6. Specific Problems. Advice on specific problems can be obtained from the cognizant area NAVENPVNTMEDU:

a. NAVENPVNTMEDU TWO, Naval Station, Norfolk, VA 23511-6288.

b. NAVENPVNTMEDU FIVE, Naval Station, Box 368143, 3035 Albacore Alley, San Diego, CA 92136-5199.

c. NAVENPVNTMEDU SIX, Box 112, Pearl Harbor, HI 96860-5040.

d. NAVENPVNTMEDU SEVEN, PSC 810, Box 41, FPO AE 09619-4299 (Naples, Italy).

7. Record Keeping and Administration. Record keeping and administration requirements for this program are described in enclosure (5).

8. Forms and Report

a. SF 600 (5-84), Health Record - Chronological Record of Medical Care, NSN 7540-00-634-4176 and SF 601 (10-75) Health Record - Immunization Record, NSN 7540-00-634-4177, are available from the Federal Supply System through normal supply

procurement procedures.

b. The Disease Alert Report, MED 6220-3, must be initiated as described in enclosures (3) and (5) when required.

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Stocked:
Naval Aviation Supply Office
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Phila., PA 19120-5099

TUBERCULOSIS SCREENING PROGRAM

1. Screening on Entry into Naval Service

a. All personnel first entering duty in the regular Navy, the Naval Reserve, the Marine Corps, and the Marine Corps Reserve for periods of duty in excess of 30 days, including duty for training, and all persons beginning employment as CIVMARs for the Military Sealift Command must have the result of a tuberculin skin test documented in their medical treatment record.

b. Whenever possible, a person with a history of active disease, a history of a previous reaction to a tuberculin skin test, or a history of INH therapy must provide adequate documentation of any prior tuberculin skin tests, clinical evaluations, hospitalizations, diagnoses, and treatments. Adequate documentation includes copies of pertinent medical records, immunization records, or a physician's statement on letterhead stationary. Transcribe pertinent information into the medical treatment record. If such documentation is not available, apply a 5 TU tuberculin skin test. Interpret and manage any reaction per the guidelines of this instruction.

2. Periodic Screening. Screen personnel according to the following criteria:

a. Annual Screening. Required for personnel in operational units and in units with a high risk for tuberculosis exposure or outbreaks, including:

(1) All shipboard personnel, both active duty and civil service.

(2) All members of deployable Navy and Marine Corps units, except for ready reservists.

(3) All health care workers, including medical and dental treatment facility workers who are not members of the Medical Department.

(4) When recommended by the cognizant NAVENPVNTMEDU (e.g., certain high risk overseas duty stations).

b. Triennial Screening. Required for all other personnel, such as those in low-risk areas (e.g., active duty and Reserve shore-based personnel in the United States), at least every 3 years. Appropriate times for required periodic testing include:

(1) Physical examinations.

(2) Receipt of permanent change of station (PCS) orders.

(3) Review of medical records by the Medical Department representative (MDR).

(4) Reporting for active duty for training (ACDUTRA).

3. Screening Before Separation From Naval Service. All personnel must have a tuberculin skin test (or annual clinical evaluation in the case of a previously-known (old) reactor) documented within the 1-year period before separation from the naval service.

4. Radiograph Requirements

a. Entry into Naval Service. Obtain a chest radiograph only if clinically indicated for the diagnosis or evaluation of suspected tuberculosis, or another medical condition, or if required for programs with special physical qualifications. There is no requirement for a chest radiograph as a routine part of the tuberculosis screening program for entry into the naval service.

b. Separation From Naval Service. Obtain a chest radiograph only if clinically indicated for the evaluation of tuberculosis or another medical condition or if required for programs with special requirements. There is no requirement for a routine chest radiograph as part of the separation physical examination.

c. Other Radiograph Requirements

(1) Chest radiographs are indicated for the following:

(a) All newly-identified tuberculin reactors as part of their evaluation to rule out active disease.

(b) Any time active disease is suspected.

(c) Tuberculin reactors, including previously-known tuberculin reactors, who are contacts of known, potentially-infectious cases of active disease.

(2) Chest radiographs are not indicated for the following:

(a) Previously-known tuberculin reactors (old reactors) as part of their required annual evaluation, if they have remained asymptomatic.

(b) Tuberculin nonreactors.

5. Screening of Dependents. There is no routinely recommended program of tuberculosis screening for dependents, except on the recommendation of the cognizant NAVENPVNTMEDU for dependents living in areas at high risk for acquiring tuberculosis. Screening of dependents who are contacts of a case of active disease is handled on a case-by-case basis. This instruction does not preclude the routine screening of categories of dependents when recommended by appropriate professional organizations, e.g., the American Academy of Pediatrics. In general, tuberculosis screening of dependents follows the procedures and techniques set out in this instruction.

6. Testing Procedures

a. Tuberculin Skin Test Materials

(1) Tuberculin, purified protein derivative (PPD). Per reference (a), the only approved tuberculin skin test material for the routine Mantoux test is the premixed Tween-80-stabilized intermediate strength PPD (5 TU equivalent) available as NSN 6505-00-105-0102 or NSN 6505-00-117-8783.

(2) Other Tuberculin Preparations. Premixed Tween-80-stabilized low strength PPD (1 TU equivalent), available as NSN 6505-00-117-8784, is used for low-strength tuberculin skin tests, when indicated.

(3) Multiple-puncture tuberculin tests (e.g., Tine or Monovac tests) produce significant numbers of both false-positive and false-negative test results, and are not to be used except on the specific recommendation of the area NAVENPVNTMEDU. The use of multiple-puncture tuberculin tests in all children and adolescents shall be discontinued.

(4) Syringes and Needles. Use a disposable 1 ml tuberculin syringe graduated in 0.1 ml intervals and fitted with a 25-gauge 5/8 inch needle, NSN 6515-00-982-4205, for administering the Mantoux test. Do not use the hypodermic jet injector for PPD administration.

b. Tuberculin Skin Test Methods

(1) Personnel authorized to perform the tuberculin test. Only trained Medical Department personnel can perform the tuberculin skin test. The senior MDR must verify in writing that all personnel administering and interpreting the Mantoux test are trained and competent.

(2) Techniques. The technique for the Mantoux method of tuberculin skin testing is depicted in figure 1 and briefly described below.

Figure 1. INTERMEDIATE STRENGTH TUBERCULIN TESTING

(a) Prepare a tuberculin syringe with a single dose of 0.1 ml of intermediate strength (5 TU) PPD. Fill the syringe immediately before use, because the solution can be absorbed on the plastic of the syringe.

(b) Make an intradermal injection of 0.1 ml of intermediate strength (5 TU) PPD on the volar aspect of the forearm. The injection site should be clean and dry.

(c) Check for evidence of a good intradermal injection. A properly applied skin test will raise a small, pale, sharply demarcated wheal on the skin, which quickly disappears. If no wheal appears, the PPD has been injected subcutaneously; immediately apply another skin test on the opposite arm.

(d) Use the same method to apply a low strength (1 TU) test. Use 0.1 ml of low strength (1 TU) PPD; do not attempt to dilute or use a reduced dose of 5 TU PPD.

(3) Measuring Results

(a) Examine the tuberculin skin test site 48 to 72 hours after administration. The test must be read by an MDR who is both trained and experienced in reading and interpreting tuberculin skin tests.

(b) Measure the induration (swelling) in millimeters at its widest transverse diameter (across the arm). Redness without induration has no significance; ignore it.

(c) Measure and record any induration. SMALL REACTIONS (LESS THAN 10 MM) ARE IMPORTANT. Measure and record them accurately.

(d) Keep the forearm relaxed and slightly flexed at the elbow. Find the margins of induration by drawing the index or middle finger lightly across the reaction. Use a flexible millimeter ruler to measure the transverse diameter of the induration. If the measurement falls between two millimeter divisions of the scale, use the lower reading.

(e) If it is difficult to locate the margins, look at the reaction in a cross-light while lightly drawing a finger over the reaction. If necessary, the extreme edges of induration may be outlined by drawing onto the skin with a ballpoint pen. From 1 inch beyond any palpable induration, apply the tip of the pen to the skin and draw a line toward the induration. When a distinct change in rolling resistance is felt, remove the pen tip from the skin. That is one edge of the induration. Repeat the steps on the opposite side of the

induration. Measure the distance in millimeters between the ends of the two pen marks.

(4) Recording Results

(a) Enter the test technique and result in the medical treatment record. Record the following information on SF 601 under SENSITIVITY TESTS: date, type of tuberculin and its strength (e.g., PPD 5 TU), and the diameter of induration in millimeters. An example of an entry is: "17 Sep 82 PPD (5 TU) 6 mm induration." Enter the information by hand. Do not use rubber stamps or automatic imprinting devices.

(b) Any induration is important, and must be recorded according to its actual measured size, e.g., "3 mm." Induration of less than 5 mm diameter must not be entered as "nonsignifi- cant," "zero," or similar phrase. Enter the complete absence of induration as "zero mm." Results must never be recorded as simply "negative" or "positive."

c. Failure to Return for Test Interpretations

(1) If the person returns more than 72 hours after PPD application and the induration is zero to 14 mm, make an entry of "not read" on the SF 601. Immediately apply a PPD test on the opposite arm.

(2) If the person returns more than 72 hours, (but before or on the 10th day), after PPD application and the induration is 15 mm or greater, the reaction is significant. Enter the indura-tion and the time interval since test application on the SF 601. Manage the person as a tuberculin reactor per enclosure (2). If there is uncertainty as to whether the area of induration is
15 mm or greater, the test should be repeated as in the previous paragraph.

(3) If the person returns more than 10 days after PPD application, make an entry of "not read" on the SF 601 regardless of the size of any induration. Immediately apply a PPD test on the opposite arm.

(4) If the person does not return at all, enter "not read" on the SF 601. Retest the person at the next opportunity.

(5) Do not under any circumstances report a skin test result as "zero mm" if the test was not read by a qualified MDR.

d. Techniques for Screening Large Numbers of Individuals. Within a command, the best opportunities for tuberculin skin are in the medical clinic or in sickbay during medical check-in, during annual record and immunization review and update, and during visits for other medical requirements. A tickler or

recall system based on birth month is often useful. Occasionally,

a more aggressive program using the "house call" approach may be necessary (e.g., large commands, contact investigations, or screening program catch-up). A qualified MDR goes to the work-space (e.g., division quarters aboard ship) to apply tuberculin skin tests. The MDR returns to the workspace in 48 to 72 hours to read the test. The percentage of tests read may be higher with this method.

7. Significant Reactor Rate. During routine screening after the initial (recruit/officer accession) screening, the rate of newly-identified tuberculin reactors normally is no more than 1 to 2 percent of personnel tested in most Navy and Marine Corps settings. If the rate of newly-identified reactors is greater than 2.5 percent among any group tested, consider searching for an active case of tuberculosis disease in the command. Obtain specific guidance from the cognizant NAVENPVNTMEDU.

8. Special Situations

a. History of Bacillus Calmette-Guerin (BCG) Vaccination

(1) Ignore a person's BCG vaccine status when evaluating them for routine PPD screening, contact investigation screening, or evaluation of suspected active clinical tuberculosis.

(2) Many foreign countries use BCG vaccine for the prevention of tuberculosis, especially among children. Most countries that use BCG vaccine have a significant risk of tuberculosis infection in their population. While the vaccine may be effective in reducing the risk of serious tuberculosis disease (e.g., meningitis) in childhood, its long-term benefit is controversial. It is not used in the United States.

(3) Initially, BCG vaccine causes a reaction to the PPD skin test. The reaction is usually less than 10 mm induration and disappears within 8 years of vaccination. There is no reliable way to distinguish tuberculin reactions caused by BCG from those caused by natural infection. A significant reaction to a 5 TU PPD skin test in a person with a history of BCG vaccine usually means infection with M. tuberculosis. Such a person should be managed per enclosure (2).

b. History of Tuberculosis Disease or Tuberculin Reaction. Persons with a history of tuberculosis disease, a history of a previous reaction to intermediate strength PPD skin test or a history of INH therapy must provide adequate documentation of their prior evaluations, diagnoses and treatments whenever possible. Adequate documentation includes a copy of pertinent medical records, a copy of immunization records, or a physician's statement on letterhead stationery. If documentation is not

available, follow the guidelines of this instruction and document in the member's medical treatment record the following: tuberculin skin test result, clinical evaluation (including chest x-ray, if indicated), diagnosis, and appropriate preventive treatment.

c. Use of Low Strength PPD. When a person gives a history of a significant or severe reaction to PPD, but has no documentation of such a reaction, repeat the tuberculin skin test. The best method is to use intermediate strength (5 TU) PPD. This method is standardized and the results are easier to interpret. However, if the person gives a history of a large vesicular reaction, the health care provider may use low strength (1 TU) PPD, which may reduce but not eliminate the risk of another large reaction. A history of a previous erythema nodosum reaction may also be an indication to use low strength PPD. A reaction of 5 mm induration or greater to a 1 TU test is significant; handle the person like a reactor with a 10 mm induration to a 5 TU test. If the reaction is less than 5 mm induration, apply a 5 TU PPD immediately and read and interpret the test in the normal manner.

d. Periodic Screening and the Booster Phenomenon

(1) Repeated or periodic testing of uninfected persons does not sensitize them to tuberculin (PPD).

(2) A person develops a hypersensitivity to tuberculin protein after being infected with M. tuberculosis or another mycobacteria (including BCG vaccine). (Hypersensitivity does not develop from simple tuberculin skin testing, no matter how often a person undergoes such testing.) The hypersensitivity, as measured by the amount of induration produced by PPD testing, may gradually decrease over the years in some persons. These persons may have no reaction, or only a small amount of induration, to tuberculin when first tested many years (decades) after their initial infection. However, a tuberculin skin test can stimulate or recall the hypersensitivity to its original degree of induration within several days. This effect does not appear in response to the skin test which stimulated it, but produces an increased reaction (a "boosted" response) on the next test. The booster phenomenon is most common in persons over age 55, but can occur at any age.

(3) The booster phenomenon is a concern in a serial or periodic screening program, because it may create the false impression of a new PPD conversion or a new infection. In this situation, the first PPD skin test produces little or no induration, but the boosted reaction, which occurs in response to a test routinely administered a year or more later, is read as

a positive skin test response. This positive response is then

falsely attributed to a tuberculosis infection newly acquired in the year between the first and the subsequent test. In reality, this "positive" result is simply the boosted response.

(a) Use an initial two-step testing procedure to reduce the likelihood of interpreting a boosted response as evidence of a new infection. If the reaction to a first test is classified as not significant as defined in table 1, apply a second test a week later. Use the results of the second test as the baseline for subsequent testing. If the reaction to the second test is significant, manage the person as infected. If the reaction to the second test is not significant, manage the person as uninfected.

(b) The two-step procedure is most useful in older persons, such as older health care workers entering an MTF screening program. Do not use the two-step procedure for recruit or officer accession screening or other active duty screening programs.

EVALUATION AND PREVENTIVE THERAPY (CHEMOPROPHYLAXIS) OF TUBERCULIN REACTORS

1. General. All tuberculin reactors (induration of 5 mm or greater to a tuberculin skin test with either 5 TU or 1 TU purified protein derivative (PPD)) must be evaluated and considered for preventive therapy with isoniazid (INH). Preventive therapy with INH, if indicated, is required for all active duty members, and should be strongly recommended for all other medical beneficiaries, unless specific medical conditions contraindicate its use.

2. Indications for Preventive Therapy (Chemoprophylaxis)

a. Tuberculin reactor on initial testing, e.g., when entering the Navy or Marine Corps.

(1) Tuberculin reactor with $\geq$ 10 mm induration is a candidate for INH preventive therapy regardless of age if they have not previously received a documented course of INH.

(2) Tuberculin reactor with < 10 mm induration is a candidate for INH preventive therapy only if one of the criteria in paragraph 2b applies.

b. Tuberculin reactor identified in subsequent periodic or contact investigation testing. Table 1 summarizes the following indications for INH preventive therapy of tuberculin reactors by age, risk factors, and size of tuberculin skin test induration.

(1) Tuberculin reactor, regardless of age, with one of the following risk factors and a positive tuberculin skin test reaction is a candidate for INH preventive therapy, if not previously treated. (The amount of induration indicating a "positive" test is given in parentheses for each situation.)

(a) Persons with known or suspected HIV infection ($\geq$ 5 mm).

(b) Close contact of newly diagnosed tuberculosis cases with active disease ($\geq$ 5 mm).

(c) Previously untreated or inadequately treated persons with chest radiographs showing fibrotic lesions compatible with old healed tuberculosis ($\geq$ 5 mm).

(d) Injecting drug users ($\geq$ 10 mm).

Enclosure (2)

Table 1. Indications for Isoniazid Preventive Therapy* of Tuberculin Reactors by Age, Risk Factors, and Size of Tuberculin Skin Test Induration

Age	Risk Factor	Tuberculin Skin Test Induration				Comment
		0-4 mm	5-9 mm	10-14 mm	≥ 15 mm	
All ages	Recruit	No	No	Yes	Yes	1
	Close contact of newly diagnosed infectious tuberculosis case	No	Yes	Yes	Yes	
	Known/suspected HIV infection	No	Yes	Yes	Yes	2
	Chest radiograph showing fibrotic lesions compatible with old healed tuberculosis	No	Yes	Yes	Yes	2
	Intravenous drug user	No	No	Yes	Yes	
	Medical condition which increases risk of tuberculosis	No	No	Yes	Yes	3
< 35 years old	Born in high prevalence country	No	No	Yes	Yes	4
	Resident of correctional facility	No	No	Yes	Yes	
	Recent tuberculin skin test convertor	No	No	Yes	Yes	5
	No risk factor	No	No	No	Yes	
≥ 35 years old	Born in high prevalence country	No	No	No	No	4
	Resident of correctional facility	No	No	No	No	
	Recent tuberculin skin test convertor	No	No	No	Yes	5
	No risk factor	No	No	No	No	

(e) Persons with medical conditions which have been reported to increase the risk of tuberculosis (≥ 10 mm). These medical conditions include: silicosis; gastrectomy; jejeunoileal bypass; weight of 10 percent or more below ideal body weight; chronic renal failure; conditions requiring prolonged high-dose corticosteroid therapy or other immunosuppressive therapy; some hematologic disorders (e.g., leukemia and lymphomas); and other malignancies.

(2) Tuberculin reactor less than 35 years of age with one of the following risk factors and a positive tuberculin skin test reaction is a candidate for INH preventive therapy, if not previously treated. (The amount of induration indicating a "positive" test is given in parentheses for each situation.)

(a) Foreign-born person from high prevalence countries (≥ 10 mm). High prevalence countries include countries in Asia, Africa, Central and South America, and Eastern Europe.

(b) Residents of correctional facilities (≥ 10 mm).

(3) Tuberculin reactor less than 35 years of age, who does not have any risk factors, but has a positive tuberculin skin test reaction of ≥ 15 mm induration is a candidate for INH preventive therapy, if not previously treated.

(4) Recent tuberculin skin test convertors (≥ 10 mm increase within a 2-3 year period for those less than 35 years old; ≥ 15 mm increase for those age 35 years and older). (Example: 25 year old U.S.-born white female had a zero mm induration 2 years ago during recruit training. Now she has a 13 mm induration on a routine screen. She is a candidate of INH even though she has no other risk factors, including a known exposure to a case of tuberculosis disease, and her reaction is less than 15 mm.)

c. Previously-known tuberculin reactor (old reactor) who was not properly evaluated in the past or who did not complete an appropriate course of preventive therapy.

(1) Previously-known tuberculin reactor less than 35 years of age is a candidate for INH preventive therapy following the criteria for risk groups and positive reactions listed above.

(2) Previously-known tuberculin reactor equal to or greater than 35 years of age is generally not a candidate for INH preventive treatment, unless specific risk factors for active disease are present. Such risk factors are set out in paragraph 2b(1)(e) of this enclosure.

(3) A previously-known tuberculin reactor may be treated without repeat testing if a properly documented tuberculin skin test result is in the medical treatment record. If a person gives an undocumented history of a tuberculin reaction and INH preventive treatment may be indicated, follow the guidance of enclosure (1) to document the current reaction to tuberculin.

3. Dosage and Duration of Preventive Therapy

a. The antibiotic regimen of choice for tuberculosis preventive therapy is INH in an oral daily dose of 300 mg for adults and 10 mg/kg (not to exceed 300 mg) for children.

b. The duration of preventive treatment therapy is determined by the presence or absence or risk factors for tuberculosis disease.

(1) Tuberculin reactors with no risk factors for the development of tuberculosis disease should receive 6 months of continuous therapy with INH.

(2) Tuberculin reactors with HIV infection and persons with stable abnormal chest radiographs consistent with past tuberculosis should receive 12 months of continuous therapy with INH.

c. Some individuals may also require a concomitant course of pyridoxine (vitamin B6) in an oral daily dose of 50 mg for adults. These are primarily individuals who are, or may be, malnourished or relatively malnourished, or who have certain types of neuropathies. Such individuals may include alcoholics, pregnant women, and some children.

d. An alternative dosing schedule is INH given twice weekly in a dose of 15 mg/kg (up to 900 mg). This schedule makes directly-observed therapy more convenient, when poor compliance with daily INH is a concern.

4. Contraindications to Preventive Therapy With INH

a. Medical Contraindications to INH Include:

(1) Previous history of INH-associated liver injury.

(2) History of a severe adverse reaction to INH.

(3) Acute or active liver disease of any etiology.

b. Neither a history of viral hepatitis nor the presence of hepatitis B surface antigen (HBsAg) is a contraindications to INH

preventive therapy, if there is no evidence of current liver disease (i.e., liver function tests demonstrate normal levels of liver enzymes).

5. Initial Evaluation for INH Preventive Therapy

a. Before instituting a course of INH preventive therapy, the tuberculin reactor must be examined by a medical officer or physicians assistant.

b. The evaluation must include:

(1) An appropriate history and physical examination.

(2) Chest radiograph for newly-identified tuberculin reactors with induration $\geq$ 10 mm. Newly-identified reactors with induration < 10 mm require a chest radiograph only if they have risk factors for tuberculosis disease. (See paragraph 2b(1)(e) of this enclosure.) Previously-known reactors need a chest radiograph if one was not documented previously or if otherwise clinically indicated.

(3) Baseline liver function tests (at a minimum, ALT/serum glutamic oxaloacetic transaminase (SGOT) or AST/serum glutamic pyruvic transaminase (SGPT)) for all reactors 35 years old or greater who will receive INH. Baseline liver function tests are not required for INH recipients under age 35, but they should be done if clinically indicated.

(4) HIV antibody testing must be performed for all newly-identified active duty tuberculin reactors. All newly-identified dependent and civilian employee tuberculin reactors, as defined in table 1, must be queried about HIV risk behaviors per reference (e). Individuals with HIV risk factors should be counseled and offered a serological screening test for HIV antibody. Acceptance of such testing is voluntary on their part.

c. The following decisions need to be made:

(1) Is active disease present?

(2) Are specific medical contraindications to INH present?

(3) Are risk factors for tuberculosis disease present?

(4) Should preventive therapy with INH be prescribed and for what duration?

(5) Should a concomitant course of pyridoxine be prescribed?

d. If the examining medical officer or physicians assistant recommends that an active duty member who is a newly-identified tuberculin reactor not start INH preventive therapy, although indicated by the guidelines of this instruction, the cognizant MDR must obtain and document a second professional opinion in the form of a consultation from a preventive medicine physician at the area NAVENPVNTMEDU or a qualified infectious disease or pulmonary medicine specialist.

e. A medical board or limitation of duties is not required or indicated for those with no evidence of active disease, i.e., for those whose only evidence of tuberculous infection is a positive tuberculin skin test. This is true whether such individuals are or are not undergoing a course of preventive therapy.

6. Followup Evaluations and Monitoring

a. INH Preventive Therapy Prescribed

(1) Closely monitor a person for whom INH preventive therapy is prescribed to ensure that they use the drug regularly and properly, and to prevent or minimize any side effects of treatment.

(2) Dispense only one month's supply of INH at one time, except in unusual circumstances. The patient needs to return for a clinical evaluation by a knowledgeable MDR prior to dispensing each month's supply of INH.

(3) Enclosure (4) gives guidance and contains a sample patient questionnaire to assist in careful clinical monitoring of the patient on INH. Documentation of the monthly evaluations will be maintained in the medical treatment record of each reactor.

(4) Liver Function Tests

(a) Routine liver function tests (at a minimum, serum alanine aminotransferase (ALT, SGPT) or serum aspartate amino-transferase (AST, SGOT)) should be obtained at least 1, 2, and 3 months after initiation of INH for the following categories of reactors:

1. All reactors 35 years old or greater.

2. Individuals who are also taking phenytoin (i.e., Dilantin).

3. Individuals who are heavy drinkers of alcohol.

4. Individuals with chronic liver disease or severe renal dysfunction.

5. Pregnancy.

(b) In some settings (e.g., aboard some ships) it is not practicable to obtain monthly enzyme levels. This should not preclude prescribing INH for any tuberculin reactor over age 35 who is otherwise healthy, provided very careful clinical monitoring is done.

(c) Liver function tests should be obtained on any reactor on INH if clinically indicated (i.e., jaundice, unexplained nausea, etc.).

b. INH Preventive Therapy Not Prescribed

(1) Candidate for INH preventive therapy. Monitor any newly-identified tuberculin reactor who is a candidate for INH, but for whom INH is not prescribed because of medical contra-indications, for evidence of active tuberculosis disease. Such monitoring should be done monthly for 6 months, then annually thereafter. Enclosure (4) has a sample questionnaire which can assist in conducting and documenting this evaluation.

(2) Not candidate for INH preventive therapy. Any tuberculin reactor (induration $\geq$ 5 mm but $\leq$ 15 mm) who is not a candidate for INH per the guidelines of this instruction must return to the appropriate periodic screening program. The results of subsequent tuberculin skin tests must be evaluated per this instruction. Tuberculin reactors with induration > 15 mm who are not a candidate for INH preventive therapy must not be returned to the tuberculin skin test screening program. Such individuals must, however, undergo an annual evaluation (history and physical examination) for active disease. These individuals will only receive a chest radiograph as part of the annual evaluation if clinically indicated.

7. Patient Education. The patient must be educated as to the implications of his or her tuberculin skin test results, the benefits and risks of INH preventive treatment, and the warning signs of untoward side effects of this beneficial antibiotic. The MDR is responsible for maintaining a patient education program which ensures these goals. The necessity for faithful adherence to the prescribed course of treatment in the absence of untoward side effects must be strongly emphasized. A notation to the effect that appropriate patient education and counseling has occurred must be documented in the patient's medical treatment record (SF 600). The sample patient questionnaire included in enclosure (4) provides the basic information to be included in patient education.

8. Completion of INH Preventive Therapy. When a person completes the appropriate regimen of preventive therapy, an entry must be made in their medical treatment regimen clearly stating that they have completed the prescribed course of therapy. No additional tuberculin skin testing or chest radiograph is required or indicated. The reactor must be placed in an annual evaluation program for previously-known tuberculin reactors (old reactors) who have received appropriate preventive therapy. See enclosure (4).

9. Special Situations

a. Missed doses or interrupted preventive therapy. A person who "feels" healthy (e.g., most tuberculin reactors) often finds it difficult to incorporate daily medication into his or her normal routine. Realistically, few reactors are able to complete 6 months of INH preventive therapy without missing an occasional dose. The effect of a few missed doses is usually of little significance, yet the additive effect of many missed doses may be quite detrimental to the effectiveness of preventive therapy. The necessity for strict compliance with daily INH therapy must be stressed to infected individuals during the required monthly clinical reevaluations.

(1) If the patient misses more than 1 month of therapy, but has completed more than 3 months of therapy at the beginning of the lapse, restart the program with the goal of completing at least 3 subsequent months of therapy.

(2) If the patient has completed less than 3 months at the time of the lapse of more than 1 month, therapy should be restarted under strict supervision with the goal of completing at least 6 subsequent months of therapy.

b. Dependents. Management of dependents who are tuberculin reactors or close contacts of persons with active tuberculosis disease must comply with local public health laws and regulations and with established standards of medical practice in the United States as defined in the most current guidelines of the American Academy of Pediatrics, the American Thoracic Society of the American Lung Association, or the Centers for Disease Control of the U.S. Public Health Service. In particular, as specified in reference (a), children and adolescents who are close contacts (household) of persons with active tuberculosis disease must receive INH in a dosage of 10 mg/kg body weight (not to exceed 300 mg/day) for 3 months, regardless of initial tuberculin skin test results. They must then be retested at the end of the 3 months and if found to be reactors must be continued on INH for a total period of 6 months. If found to be nonreactors after the initial 3 months of INH, and if exposure has ended, INH may be discontinued.

c. Civilian workers on Navy or Marine Corps activities. In areas of high tuberculosis risk in which infection of civilian workers aboard Navy or Marine Corps activities poses a continuing significant public health problem, consultation must be obtained from the area NAVENPVNTMEDU for recommendations regarding an effective local control program. Provisions of reference (a) apply, as appropriate.

d. INH-resistant tuberculosis and preventive treatment of persons allergic to INH. INH is the only antibiotic with demonstrated efficacy in the prevention of tuberculosis disease among infected persons. However, resistance to INH has been increasingly recognized in some areas. Also, some persons may be allergic to INH. In cases where tuberculin reactors (or exposed children, regardless of skin test status) are known to be close contacts of a person or persons with demonstrated INH-resistant tuberculosis, rifampin may be substituted for INH in an adult, daily dose of 600 mg orally. The comparable pediatric dose is 10-15 mg/kg body weight, not to exceed 600 mg per day. In such cases, consultation must be obtained with a qualified pulmonary medicine or infectious disease specialist. Such a course of action may also be appropriate for tuberculin reactors who are allergic to INH.

e. Persons Leaving the Service While on Preventive Therapy

(1) Retirement. Active duty and work-related civil service members on INH preventive therapy who retire before completing their course of INH must be counseled, with appropriate documentation in their health records (SF 600), that continued treatment is necessary and may be obtained at most Armed Forces or Department of Veterans Affairs (DVA) medical facilities.

(2) Separation. Active duty and work-related civil service members on INH preventive therapy who are discharged or released to inactive duty before the completion of their course of INH must be counseled, with appropriate documentation on a SF 600 in their medical treatment records, as to the importance of continuing the medication. Care may be provided by the DVA, public health clinics, private physicians, etc. To facilitate followup, such personnel must be provided with a statement signed by the cognizant MDR containing the date treatment was begun and the type and dosage of prescribed medication.

10. <u>INH-Associated Hepatitis</u>

a. In the past, misconceptions about tuberculosis preventive treatment have abounded. The most common error is the assumption that tuberculin reactors over 35 years of age should not be

placed on tuberculosis preventive therapy. Another frequent mistake is the practice of restricting tuberculosis preventive therapy only to those tuberculin reactors who also have a chest radiograph abnormality. The risks associated with tuberculosis preventive therapy, though real, have often been grossly exaggerated. The result is that many infected individuals who might benefit from an appropriate course of tuberculosis preventive therapy are never given this preventive therapy.

b. An elevation of SGOT or SGPT up to four times normal in an otherwise asymptomatic person is not necessarily an indication for stopping preventive therapy, but rather for closer monitoring. The significance and use of these liver enzyme levels is discussed below. Most people, regardless of age, experience some elevation of hepatic enzyme levels in the blood during the first few months of INH therapy. Usually, these levels plateau at about the third month of therapy. If this pattern does not occur and hepatic enzyme levels continue to rise, or if there is a precipitous increase of more than 4 times the patient's normal baseline level, this is evidence of liver toxicity and the INH should be discontinued at once. In most people, once hepatic enzyme levels reach a plateau, they return rapidly to normal baseline levels.

c. The cognizant MDR should be thoroughly knowledgeable of the signs and symptoms of INH hypersensitivity and toxicity states as discussed in the manufacturer's package insert or prescribing information. The cognizant MDR must STOP THE USE OF INH AT ONCE if significant untoward side effects are suspected. The patient's health status must then be very carefully evaluated to determine if the manifestations noted were induced by INH. An experienced specialist should be consulted for this evaluation.

d. The risk of INH-associated hepatitis increases with age and is potentially fatal if the appropriate signs and symptoms are not monitored. This age-specific risk is as follows:

Age	Approximate Risk of INH-Associated Hepatitis
20 years	0 per 1,000
20-34 years	3 per 1,000
35-49 years	12 per 1,000
50-64 years	23 per 1,000
>/=65 years	8 per 1,000

The risk of active tuberculosis disease is about 50 per 1,000 among newly-identified tuberculin reactors. At no age does the risk of INH-associated hepatitis outweigh the risk of active tuberculosis disease in this group. Therefore, all newly-identified reactors deserve INH preventive therapy provided no

specific medical contraindication exists. However, individuals over the age of 35 years should be monitored most carefully while taking INH.

e. INH preventive therapy for previously-known (old) reactors. Previously-known tuberculin reactors (more than 2 to 3 years previously) who have never received a complete course of INH preventive therapy should be re-evaluated for INH preventive therapy. Unlike the situation with newly-identified reactors, when the risk of active tuberculosis disease is about 5 percent and clearly outweighs the risk of INH-associated liver toxicity, the situation with previously-known reactors may differ, depending on age and their risk factors for tuberculosis disease. If they have no risk factors, their risk of developing active tuberculosis disease is about 1 percent. If under 35 years of age, they may benefit from a course of INH preventive therapy and should be evaluated for this antibiotic. If over 35 years of age, however, their risk of INH-associated liver toxicity outweighs their risk of active tuberculosis and they should receive an annual clinical evaluation per enclosure (4) in lieu of INH preventive therapy. To reiterate, this does not apply to newly-identified reactors who will be given INH preventive therapy REGARDLESS OF AGE, provided no specific medical contraindication is present.

TUBERCULOSIS CONTACT INVESTIGATION PROGRAM AND TUBERCULOSIS PATIENT MANAGEMENT

1. Program Summary. Upon discovery of an active case of tuberculosis disease in the command, do the following:

a. Initiate a Disease Alert Report (MED 6220-3), as required by reference (b).

b. Locate the patient's close contacts (i.e., spouse or significant others, household, berthing compartment, or workspace).

c. Screen these contacts for evidence of tuberculosis disease or infection and repeat the screening investigation 3 months later. Manage any tuberculin reactors as described in enclosure (2).

d. Maintain records of the summary results of the investigation per enclosure (5).

e. Clinically evaluate possible secondary cases for tuberculosis disease.

2. When to do a Contact Investigation. An investigation must be started upon notification that a present or former (within the past 6 months) member of the command has suspected or confirmed tuberculosis disease. If the person suspected of having tuberculosis is subsequently found not to have the disease, the investigation, which was begun among the contacts, may be stopped.

3. How to do a Contact Investigation

a. Investigation of contacts.

(1) Identify each person who has been a close contact of a known case (whether suspected or confirmed) of infectious tuberculosis disease for evidence of tuberculosis.

(2) Screen each close contact for evidence of tuberculosis infection or disease initially and 3 months later.

(a) Contacts, who are tuberculin nonreactors or who have not been identified as tuberculosis infected, must receive a tuberculin skin test per enclosure (1) with repeat skin tests at 3 months unless testing indicates they are reactors or convertors. If skin test is missed at 3 months, the test still must be done as soon as possible. Any tuberculin reactors or convertors identified during this screening should be managed

per enclosure (2).

Enclosure (3)

(b) Contacts who are previously-known (old) tuberculin reactors must receive an initial evaluation consisting of a chest radiograph and a clinical examination for evidence of active tuberculosis disease. The clinical evaluation must be repeated at 3 and 6 months, but the chest radiograph only repeated if clinically indicated.

(3) Start and maintain appropriate documentation in the medical treatment record (SF 600) of each contact. Record the results of the initial and all subsequent evaluations on an SF 600. Take particular care to record all items before the transfer of an involved member from the command.

(4) The command undertaking the tuberculosis contact investigation must maintain a "tickler" file or equivalent system to ensure the timely evaluation of all contacts. If a followup evaluation is missed, conduct the screening at the earliest possible date.

(5) Upon completion of the 3 month followup period, those contacts who remain tuberculin nonreactors will return to the routine tuberculosis screening program per enclosure (1).

(6) Contacts separating from the service must be counseled, with documentation on a SF 600, regarding the need for appropriate medical evaluation.

b. Special Situations

(1) Active Tuberculosis Disease Aboard Ship

(a) When a case of active tuberculosis disease is discovered aboard ship, crewmembers who share the same berthing compartment or workspace on a regular basis with the suspect case are close contacts. In addition, any very close friends of the case should be considered close contacts. Also, consider as close contacts any crewmembers whose berthing compartments or workspaces are served by the same ventilation system as the suspect case.

(b) All or most of the crew may be close contacts in some situations. On smaller ships, it may be easier to screen the entire crew, than to decide on who is a "close" contact. When a patient is highly infectious (e.g., the patient has cavitary pulmonary disease or has sputum which is strongly positive for tubercle bacilli), more crewmembers are at risk of tuberculosis infection. Also, if the patient is highly infectious, and duties took him or her many places on the ship or put them in regular contact with many crewmembers, more crewmembers should be considered close contacts. Consult the area NAVENPVNTMEDU for advice in specific instances where question exists.

(c) The percent of close contacts who are tuberculin reactors or convertors is a good indicator of the case's infectivity. If a large percentage of close contacts are newly-identified reactors, the case was "infectious." It may be necessary to expand the definition of "close" contacts and screen a larger group of crewmembers. If less than 2.5 percent of close contacts are newly-identified reactors, the patient was probably not very "infectious."

(2) Active Tuberculosis Disease at a Shore Facility. The cognizant MDR and local preventive medicine professionals determine the close contacts of an active case of tuberculosis disease at a shore facility. Contacts include any dependents with whom the patient resides, any person who shares the same berthing facility (room, open bay barracks, apartment, etc.), close work contacts during duty hours, and frequent liberty and social companions. Commands or activities with exceptionally close living conditions, such as Antarctic units, must follow the guidelines listed for ships. Consult the area NAVENPVNTMEDU for advice in specific instances where any question exists.

(3) Medical Department Personnel. Military and civilian health care workers who are exposed to patients with tuberculosis disease in the course of their work may be exempted from the contact investigation requirements of this instruction only if they took adequate respiratory precautions before the diagnosis of active tuberculosis disease and if their annual screening is up to date per enclosure (1). This procedure assures followup, yet reduces the administrative burden resulting from multiple exposures to tuberculosis among the same staff members. If such persons are contacts of an active case of tuberculosis disease other than in a patient as described above, they must be included in the contact investigation program. The frequency of hospital staff tuberculin testing must be increased if recommended by the infection control committee of the health care facility or the cognizant NAVENPVNTMEDU.

c. Tuberculin Reactors or Convertors Found During a Contact Investigation. Evaluate these individuals for evidence of tuberculosis disease and INH preventive therapy per enclosure (2). In a close contact of a newly diagnosed infectious tuberculosis case, a tuberculin reaction of $\geq$ 5 mm induration is indication for INH preventive therapy regardless of the contact's age.

d. Possible Secondary Cases of Tuberculosis Disease Found During a Contact Investigation. If another active case of tuberculosis disease is discovered during the course of a contact study, it is not necessary to begin an entirely new investigation. However, do start contact studies on any persons exposed to the additional cases who were not included as a part

of the original investigation.

4. Responsibility for Managing the Contact Investigation. The commanding officer or officer in charge of the duty station to which a person with tuberculosis disease was attached at the time of the diagnosis of his or her disease, is responsible for the tuberculosis contact investigation. However, the actual conduct of the contact investigation is carried out by the appropriate responsible supporting medical department or facility. The commanding officer or officer in charge of any activity is responsible for the successful continuation or completion of contact studies initiated or underway among personnel assigned to or transferred to his or her unit. Any person transferred from the command before contact study is complete must have appropriate documentation on SF 600 in the medical treatment records so the study may continue at the member's subsequent duty station.

5. Management of a Patient with Active Disease. A patient with suspected active disease generally should be referred to a medical treatment facility for inpatient evaluation, diagnosis, and initial treatment.

a. Tuberculosis Referral Centers

(1) The following hospitals are designated to act as contact points for pulmonary medicine or infectious disease consultation and patient transfer if needed: NAVHOSP Oakland, CA; NAVHOSP Portsmouth, VA; NAVHOSP San Diego, CA; and NAVHOSP Bethesda, MD.

(2) These centers: Handle complicated cases of tuberculosis; act as a consulting service for smaller medical and dental treatment facilities with questions on diagnosis, treatment, or disposition of patients; and oversee the reevaluation of tuberculosis cases. At the discretion of the chief of the pulmonary disease or infectious disease service, the reevaluation of any given patient may be performed at another naval medical treatment facility. The results of the reevaluation, including radiographs, must be reviewed at the tuberculosis referral center.

b. All medical treatment facilities: Handle uncomplicated cases of tuberculosis in consultation as appropriate with tuberculosis referral centers; notify the patient's last duty station of the confirmation or revision of the diagnosis of tuberculosis; maintain a patient education program adequate to assure cooperation by the patient during the extended treatment and followup period; maintain records on patients undergoing treatment and followup; perform reevaluation of tuberculosis patients (with guidance provided by the pulmonary medicine or infectious disease service at the nearest tuberculosis referral center); and actively cooperate with CDC, Atlanta, GA in its

tuberculosis laboratory quality control program.

6. Decontamination of Spaces Occupied by Persons with Active Tuberculosis Disease. Tuberculosis is transmitted by small airborne droplets or droplet nuclei from person to person in close contact or possibly through ventilation systems, such as on ships. Other dried secretions and fomites in themselves do not pose a significant hazard. Therefore, when a case of active pulmonary tuberculosis disease is discovered, the filters in the ventilation system exhausting the berthing, messing areas, workspaces, and medical spaces must be cleaned per local directives for the maintenance of such filters. No extra (nonroutine) measures need to be taken in cleaning berthing spaces and bedding. If possible, increased circulation of fresh air and exposure of the spaces to natural light (sunlight) will rapidly clear any infectious, airborne droplet nuclei from the spaces. No other sanitation measures are necessary. The area NAVENPVNTMEDU may be consulted for advice in specific instances.

PERIODIC PATIENT EVALUATIONS

1. Purpose. A successful tuberculosis control program is dependent on the cognizant MDR. Many units have tuberculosis programs that are thorough in testing and record keeping, only to fail by not referring tuberculin reactors for preventive therapy or by not having periodic followup to ensure compliance. Two types of brief periodic patient evaluations are required.

2. Monthly Evaluations

a. After newly-identified tuberculin reactors (or previously-known (old) reactors who have never before had INH) have been referred for preventive therapy, the cognizant MDR must follow these patients monthly until preventive therapy is complete (usually 6 to 12 months). The purposes of these visits are:

(1) To ensure patient compliance with taking INH.

(2) To review with the patient the signs and symptoms of INH-induced liver toxicity.

(3) To review with the patient the signs and symptoms of tuberculosis disease, which can develop even while taking INH preventive therapy. This is particularly important for tuberculin reactors who could not take INH because of a medical contraindication.

b. A locally-prepared patient questionnaire can assist the MDR in this brief evaluation before dispensing another month of INH preventive therapy (see example on page 3 of this enclosure). If any question of liver toxicity or active tuberculosis disease emerges from this evaluation, refer the patient to a medical officer as soon as possible (within 72 hours, if possible). If liver toxicity is suspected, discontinue INH until the medical officer evaluation. Make an appropriate entry in the health record (SF 600) for all monthly evaluations.

3. Annual Evaluations

a. All tuberculin reactors who have completed a course of preventive therapy and monthly evaluations, as well as all previously-known reactors (whether or not they have completed a course of INH) must receive a brief clinical evaluation by the cognizant MDR annually. The purpose of this visit is to review the signs and symptoms of tuberculosis disease with the patient.

Enclosure (4)

b. If any question of tuberculosis disease emerges from this evaluation, refer the patient to a medical officer as soon as possible.

c. Make an appropriate entry in the health record (SF 600) for all annual evaluations. A locally-prepared patient questionnaire can assist the MDR in this evaluation and documentation (see example on page 4 of this enclosure). A routine chest radiograph is not indicated and is not required.

BUMEDINST 6224.8
8 Feb 93

Sample Monthly Patient Questionnaire

PATIENTS ON INH PREVENTIVE THERAPY

Please check each of the following that apply to you:

1. It has been 2 or more months since I have seen a physician concerning my medication. Yes __ No __

2. I have missed taking my medication since my last evaluation. Yes __ No __

   If Yes, specify number of days missed: _____

3. Since my last evaluation I have had:

   Unexplained fever lasting more than 3 days. Yes __ No __

   Nausea, vomiting, or diarrhea lasting more than 3 days. Yes __ No __

   "Yellow Jaundice." Yes __ No __

   "Yellow Eyes." Yes __ No __

   Dark urine. Yes __ No __

   Unexplained muscle or joint aches lasting more than 3 days. Yes __ No __

   I have felt rundown since my last visit. Yes __ No __

   I have felt a burning sensation in my hands or feet. Yes __ No __

BUMEDINST 6224.8
8 Feb 93

Sample Annual Patient Questionnaire*

PATIENTS WHO HAVE COMPLETED INH PREVENTIVE THERAPY

Please check each of the following that apply to you:

1. I presently smoke cigarettes, cigars, or a pipe. Yes __ No __
   If Yes, what type: _____; how many per day: _____

2. I have the following symptoms:

   Persistent cough. Yes __ No __

   Coughing up blood. Yes __ No __

   Unexplained fever. Yes __ No __

   Unexplained weight loss. Yes __ No __
   If yes, about how many pounds: _____

   Night sweats. Yes __ No __

3. I have felt run down since my last visit. Yes __ No __

4. I have sought care in the past year for chest symptoms. Yes __ No __

   If yes, specify when and the symptoms below:

   _____
   _____
   _____
   _____
   _____
   _____
   _____

* Also use these questions for the monthly evaluation of newly-identified tuberculin reactors who cannot take INH preventive therapy.

RECORD KEEPING AND ADMINISTRATION

1. Disease Alert Reports

a. As required by reference (b), a Disease Alert Report (MED 6220-3) must be submitted upon suspicion or confirmation of a diagnosis of tuberculosis. The Disease Alert Report must include the date that the diagnosis was first suspected and, when available, the date the diagnosis was confirmed. If the medical staff determines that the patient was probably not infectious, the message should so state.

b. For confirmed cases, the commanding officer of any duty station where the patient may have posed a public health risk for transmitting tuberculosis must be an information addressee, so that appropriate tuberculosis contact studies can be instituted or continued. Per reference (b), civilian or other public health authorities must be notified, as appropriate.

c. If a diagnosis of tuberculosis is subsequently ruled out, a message to that effect must be sent so that unnecessary tuberculosis contact studies can be terminated.

2. Records for a Tuberculosis Contact Investigation. The command initiating the contact investigation must prepare and maintain summaries of the investigation. Summary records are required for the initial study and the 3 month followup investigation. The record must be retained on file for at least 3 years. The records must include the information shown on page 2 of this enclosure.

3. Annual Summary Record

a. Prepare a summary record annually by each activity with Medical Department personnel attached and by ships of the Military Sealift Command. This summary record covers the period 1 January through 31 December, inclusive. These summary records must contain the items listed on page 3 of this enclosure, and must be retained on file for at least 3 years. A copy of this summary must be sent to the cognizant NAVENPVNTMEDU, as defined in reference (b), by 28 February after each year.

b. Record deployed units with separate Unit Identification Codes (UICs) (e.g., embarked air squadrons, Marine Corps units aboard amphibious ships, etc.) separately. Such units, when not deployed, must be included in the records of their "homeport" shore establishments. Recruit training activities and other commands which test large numbers of transient personnel must record permanently assigned and transient personnel (e.g.,

recruits, students) separately under item number 2 in the format provided on page 3.

Enclosure (5)

CONTENTS OF A SUMMARY OF A TUBERCULOSIS CONTACT INVESTIGATION

1. UIC.

2. Name, grade or rate, social security number, age, sex, and race or ethnic group of original case.

3. Status of investigation, i.e., initial or 3 month evaluation.

4. For each evaluation period (initial or 3 months) provide:

    a. Number of persons who received tuberculin skin test.

    b. Number of newly-identified tuberculin reactors.

    c. Number of tuberculin reactors placed on INH preventive therapy. (See comments section below.)

    d. Number of previously-known (old) tuberculin reactors evaluated.

5. Number of contacts receiving INH preventive therapy.

6. Name, grade or rate, social security number, age, sex, and race or ethnic group of each secondary case of active disease.

7. Comments on Investigation. (Include reasons any newly-identified tuberculin reactors were not placed on INH.)

CONTENTS OF ANNUAL SUMMARY RECORD OF TUBERCULOSIS SCREENING OF ACTIVE DUTY/CIVMARs PERSONNEL

1. Name and UIC of command or unit.

2. Usual number of permanent active duty or CIVMARs personnel assigned aboard this UIC.

3. Number of previous nonreactors (or people of unknown PPD status) who received an interpreted 5 TU PPD skin test at this command during previous 12 months.

4. Number of tuberculin reactors identified at this command.

5. Number of tuberculin reactors placed on INH.

6. Number of tuberculin reactors not placed on INH or for whom INH was discontinued because of untoward side effects.

(Specify reason in each case in "Remarks" section.)

7. Number of previously-known (old) reactors who received required annual clinical evaluation.

8. Number of active cases of tuberculosis identified at this command during previous 12 months (include name, grade or rate, social security number, age, sex, race/ethnic group, and date of diagnosis in "Remarks" section).

9. Remarks: